REMARKS

The Examiner's courtesy in an April 6, 2007 telephonic interview is acknowledge and appreciated. As a result of the interview, the rejections concerning Simpson under §103 have been withdrawn as the Examiner acknowledges the common ownership. The above amendments and following remarks address the rejections under §102(e) based upon Simpson, and also the possibility of a double patenting rejection. Neither rejection is believed to be appropriate, for the following reasons.

As a preliminary matter, claim 14 is rewritten in independent form and is believed to be allowable, along with its amended claims. Some amendments have been made for clarity.

Regarding the outstanding rejections, as a first point, the amendments to claim 1 make clear that a particular material, as specifically identified in the art, is being claimed, namely, porous nanocrystalline silicon. This is a particular material that is not an aerogel. Information on the web is available, for example, on Yahoo by typing in the search "an aerogel is", which retrieves a number of basic articles describing aerogel materials. A basic article from the Pittsburgh Post-Gazette at www.post-gazette.com/healthscience/20021021antarcticsidesci4p4.asp describes aerogels as nanometer hair like structures separated by about 20 nanometers. Another article at http://www.llnl.gov/str/Foxhighlight.html describes aerogels as "cross-linked internal

structure gives aerogels the highest internal surface area per gram of material of any known material. Aerogels also exhibit the best electrical, thermal, and sound insulation properties of any known solid." As for porous nanocrystalline silicon, which is more commonly referred to as porous silicon, it is not an insulator having the hair like structure of aerogels, and is not formed by anything like a sol gel process. As stated in an article by Willoughby that can be found at http://www.royalsoc.ac.uk/downloaddoc.asp?id=1232, porous nanocrystlline silicon is "Porous nanocrystalline silicon is a fascinating variant of the same single crystal silicon wafers used to make computer chips. Its synthesis, a straightforward electrochemical or chemical etch, is compatible with existing silicon-based fabrication techniques. Porous silicon literally adds an entirely new dimension to the realm of silicon-based technologies as it has a complex, 3-dimensional architecture made up of silicon nanoparticles, nanowires, and channel structures. The intrinsic material is photoluminescent at room temperature in the visible region due to quantum confinement effects, and thus provides an optical element to electronic applications." It is more commonly referred to as simply "porous silicon", and a Yahoo search on "porous silicon is" will return any number of articles that explain what porous silicon is. For example, wikipedia explains that "Porous silicon (pSi) is a form of the chemical element silicon which has an extremely large surface to volume ratio. It is usually manufactured by etching away most of a layer of silicon using wet chemical etches. Many etches are based on hydrofluoric acid." Various university articles and other information is available in subsequent results from the search.

Generally, what is clear is that no artisan would equate Simpson "silicon aerogel" with the claimed "porous nanocrystalline silicon." The two materials have completely different structures and properties, and are formed by different processes. Thus, regarding the 102 rejection of claims 1, 2, 8, and 9, Simpson fails to disclose the porous nanocrystalline silicon material. Aerogels are fundamentally different than porous nanocrystalline silicon, and cannot be formed by the same methods. The silica aerogel in Simpson is an extremely low density solid and is an insulator. Nanocrystalline silicon is a distinct material having different properties than Silica aerogel, as recognized in the art. It is improper to compare the silica aerogel with the claimed Nanocrystalline silicon. See, e.g., U.S. Patent No. 7,179,717, claim 33, recognizing the conductive properties of nanocyrstalline silicon. Silicon aerogel is a distinct material, as discussed above with respect to the additional information provided to the examiner.

New claim 29 has also been added. It depends from claim 1 and specifies the particular porous nanocrystalline preferred materials as described in the paragraph that begins at the end of page 3. The porous nanocrystalline silicon material of the invention is more stable, and more easy to form and load than Simpson's aerogel. Simpson describes a complex process that is "problematic because even ultrafine particles will tend to settle before the gel sets up". C7, L60 et seq. In contrast, as described on page 9 of the specification, electrochemical etching followed by exposure to a solution provides a reliable

and simple technique to produce a porous silicon + oxidant device that can be detonated by a number of detonation techniques.

The §103 rejection of claim 3 based upon Simpson/Aubert is separately traversed. In columns 7 & 8, Simpson points out the difficulties in powder/particle addition into to sol gel precursors of aerogels. Simpson is specific as to using RDX or PETN to prevent loss of solubilized energetic molecules during super critical extraction, a necessary step to forming an aerogel. While the potassium or ammonium nitrates may have similar oxidation properties, there is no evidence suggesting that their substitution into the particular sol gel formation process to create nanocomposites in Simpson is feasible.

For the foregoing reasons, Applicant submits that this Application is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned attorney if an interview would expedite the prosecution.

Respectfully submitted,

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